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EXAMINER

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ART UNIT	PAPER NUMBER
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1755

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10/13/95

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/544,212

Applicant(s)
Russo et al

Examiner
David M. Brunsman

Group Art Unit
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☒ Responsive to communication(s) filed on 11 Sep 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-55 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-55 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Applicant's response filed 11 September 1998 has been carefully considered but, not found persuasive. The amendment to claims 33-35 has been placed in the file but, not entered for failing to comply with MPEP 608.01(m). *Rule 121(b)(2)*

Claims 1-20, 22-26, 28-55 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compositions, films and coating methods and coated articles including coating compositions comprising the TEOS, MBTC and an accelerant of triethyl borate, triethyl phosphate or water, does not reasonably provide enablement for inventions not using the recited silicon oxide precursors and inventions wherein the metal oxide precursor does not comprise a tin oxide precursor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

The prior art cited in the patent is exemplary of the convincing evidence of record that the use of different materials in CVD-type coating processes requires substantially different process conditions not expected to be simply predictable by one of ordinary skill in the art. The discussion of the prior art at pages 1-4 of the specification teaches that a number of silicon oxide precursors are not useable for the purposes of the instant invention. One of ordinary skill in the art is given no further direction how to best choose those precursors that exhibit the required characteristics. For example, US 4206252 describes a process in which volatile silicon oxide precursors are required to have Si-Si and Si-H bonds to be useful in the described invention. US 5028566 explicitly teaches some compounds are unsuccessful when the described process is attempted.

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The compounds employed in US 4187336 are described by the instant inventors as producing insufficient deposition rates. As stated in the instant specification: "From a review of the prior art, it cannot be determined what precursor combinations, if any, can be used for continuous deposition, under conditions and at a rate suitable for mass production, of mixed metal oxide/silicon films at adequate rates from readily available and relatively inexpensive reagents." If one of ordinary skill in the art cannot predict which compounds are suitable for use under the broad range of conditions described as "under conditions and at a rate suitable for mass production", one of ordinary skill in the art certainly could not be expected to predict the conditions at which a large number of vastly different compounds may be used without explicit guidance by the instant specification. No evidence is of record to show that selecting the process conditions necessary to exploit each of the large number of precursor combinations would have been within the level of ordinary skill in the art at the time the inventions was made. In fact, the instant specification implies just the opposite. Column 4, lines 13-38 of the patent under reissue require the presence of a silicon oxide precursor in the coating composition of the broadest invention described. With respect to accelerants, the instant specification demonstrates that the system temperature is dependent upon the material employed as accelerant. Water, triethylphosphite and triethyl borate are demonstrated as effective and the system temperature at which they must be employed is disclosed (see tables 1 and 2). Other materials, such as added MBTC or oxygen, alone, are described as insufficient. No further guidance is provided to allow one of ordinary skill in the art at the time the invention was made to determine useful accelerants

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without undue experimentation. Column 7, lines 28-32 teach that the combination of an accelerant of TEP or TEB and TEOS/MBTC are synergistic with respect at least to the process condition of deposition rate providing further evidence that determining the required process conditions would require undue experimentation on the part of one of ordinary skill in the art.

Claims 33-55 are rejected under 35 U.S.C. § 251. The original application contained claims to a coating composition containing an tin oxide precursor compound and an silicon oxide precursor compound. These claims were rejected as being unsupported by the original specification in that only certain species of silicon oxide precursor were enabled. In response to this rejection applicant limited the claims to compositions wherein the silicon oxide precursor was limited to the species recited in patented claim 1. Instant claims 33-55 expand the scope of the invention to include any compound including those specifically included in the original rejection. Clearly, if the coating composition to be used is not enabled, claims to processes of using and products made therefrom cannot be enabled. "The recapture rule bars the patentee from acquiring, though reissue claims that are of the *same or broader scope* than those claims that were canceled from the original application." *Ball Corp. v. United States*, 221 USPQ 289, 295; see also *In re Willingham*, 127 USPQ 211; *In re Richman*, 161 USPQ 359 and; *In re Wadlinger, Kerr and Rosinski*, 181 USPQ 826. Reissued claims must include limitations made in the original application to overcome the rejection therein. See, *Mentor v. Coloplast*, 27 USPQ2d 1521, 1524. The prosecution history of the application which matured into US Patent 5401305 show that the examiner rejected Claims 1-10, 14-23, 25 and 26, including all the independent claims, as the

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specification being enabled only for compositions wherein the silicon oxide precursor is limited to that recited in original claim 11. In response to this action applicant's amended the claims to limit them to compositions comprising at least one of those silicon oxide precursors.

Claim 30 is rejected under 35 U.S.C. 112(4), as failing to further limit the parent claim as a silicon oxide precursor is already required by the parent claims as amended.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 33-35, 37-41, 43-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordon US Patent 4,187,336.

The reference teaches depositing by CVD an amorphous, continuously graded mixed tin/silicon oxide film on glass from a gaseous composition of a tin oxide precursor, a silicon oxide precursor and water or oxygen gas at 480 C. See example 4, Table E, column 6, lines 1-56. The similar materials, conditions and process employed would be expected to produce similar products.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-32, 36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon as applied above, and further in view of Lagendijk.

The difference between claims 28-32 and Gordon is the silicon oxide precursor employed. Lagendijk teach that silicon oxide precursors within the scope of the instant claims are advantageous for use in CVD. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ those compounds in order to obtain the disclosed advantages.

Claims 36 and 42 specify particular compounds to be as accelerant. Lagendijk teaches addition of trimethylborate or triethylphosphite to CVD compositions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add triethylphosphite to the composition of Gordon in order to obtain the advantages disclosed by Lagendijk.

Applicant's arguments filed 11 September 1998 have been carefully considered. The scope of enablement of the original specification is limited to compositions of TEOS, MBTC and accelerant selected from TEB, TEP and water. Claims broad enough to cover a large number of compositions that do not exhibit the desired properties fail to satisfy the requirements of 35 U.S.C. 112. See, *In re Cook*, 169 USPQ 298, 302; *Cosden Oil v. American Hoechst*, 214 USPQ 244, 262. Merely reciting a desired result does not overcome this failure. *In re Corkill*, 226 USPQ 1005. While other inventions including films comprising a metal oxide and an

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accelerant may be disclosed in the instant specification they have not been enabled, i.e. one of ordinary skill in the art has not been reasonably taught how to *make and use* such any invention without having to carry out undue experimentation. The examiner has presented convincing evidence that suggests selection of other combinations that would exhibit the basic and novel characteristics of the invention would require undue experimentation. No *evidence* has presented to rebut this finding. The instant specification provides insufficient guidance for choosing other accelerators. While the tables therein may show incremental increases in concentration of particular accelerants produce incrementally increased deposition rates, the specification explicitly states that these rates are "not to levels needed for commercial applications", i.e. 350 angstroms/sec.

In the previous office action an obvious typographical error occurred in the inclusion of "not" at line 7 of page 4. The intended meaning of the passage is abundantly clear in view of the context.

The examiner stands by and maintains the rejection under section 251 (recapture). Subject material cancelled in an application for patent that resulting in the subsequent allowance of the claims simply may not be recaptured by reissue proceedings.

The rejection of claim 30 stands. The recitation of claim 30 does not further limit claim 28, from which it depends. Claim 30 recites addition of a component already present in claim 28.

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Table E of the Gordon reference teaches water can be used as an oxygen source in CVD. Table D does not limit oxygen sources to O₂ or N₂O but, only refers to them as "oxidizing gases such as..." Therefore, there is no "teaching away" in the reference in the simple recitation of different examples. In the rejection under 103 over Gordon in view of Lagendijk the motivation to combine the teachings of the references is clearly stated. The term "these compounds" has clear antecedent basis as "silicon oxide precursors within the scope of the instant invention". The "disclosed advantages" are just that - Lagendijk discloses that said silicon oxide precursors are advantageous for use in CVD. Lagendijk also discloses certain advantages are obtained by use of triethylphosphate, for example, even if not referring to the material as an "accelerant." A different name for a material does not lend patentability to its use. Assertion that examiner combined prior art for a different reason does not warrant reversal of finding of obviousness. *Ex Parte Raychem Corp.*, 17 USPQ2d 1417. Further, The mere failure of a reference to disclose all the advantage asserted by applicant is not a substitute for actual difference in properties. *In re DeBlauwe*, 222 USPQ 191. Applicant's arguments repeatedly point out mixtures of materials otherwise falling within the scope of the instant claims may fail to achieve the deposition rate highlighted by the instant application, providing further evidence of the failure to fully enable the contested claims. See, *In re Cook*, *Cosden Oil v. American Hoechst* and; *In re Corkill*; *supra*. Applicant's arguments serve to further highlight the evidence of Lagendijk of the unpredictability of the art.

The last paragraph of page 6 of the previous office action can be read as "the difference between claims 36 and 42 and the other claims subject to the rejection."

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Brunsman whose telephone number is (703) 308-3454. The examiner can normally be reached on Mondays, Tuesdays, Thursdays and Fridays from 6:30 am to 5:00 pm eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone number for this Group is (703) 305-3599.

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Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [mark.bell@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

DMBrunsman
October 9, 1998



David M. Brunzman
Primary Examiner
Group 1755